

## Multifunctional Flexible Aerogels for Inflatable Habitats, Phase I

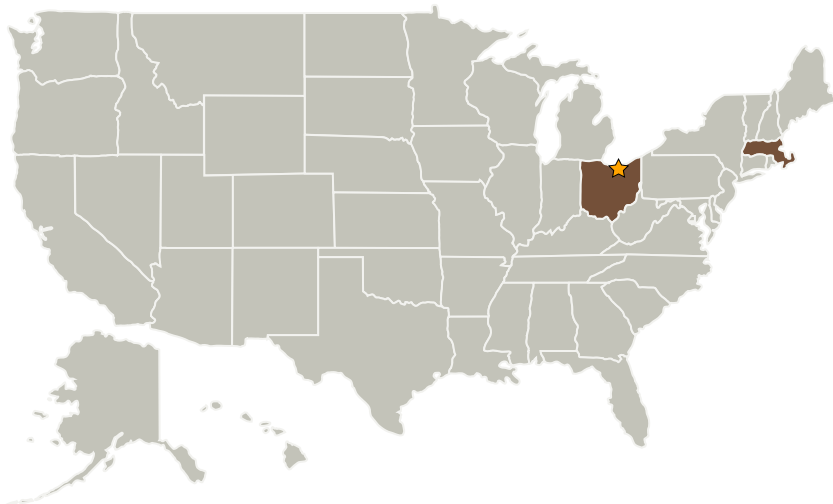
Completed Technology Project (2008 - 2008)



## Project Introduction

In 2005, President George W. Bush issued a Vision for Space Exploration that included a return to the lunar surface by as early as 2015. This mission is expected to undertake far more ambitious activities than those of the previous Apollo mission, possibly involving medium to long term lunar habitation. The use of inflatable structures for large-volume crew habitation on the lunar surface has proven to be an effective technology to maximize payload volumes and reduce overall launch costs. NASA is currently seeking cutting edge material technologies that can simplify the construction of these habitats and provide for enhanced performance. Aspen Aerogels proposes to develop novel hybrid aerogel materials that are able to simultaneously provide for thermal, micrometeoroid and radiation protection in one single layer. Chemical modifications in the sol-gel preparation of aerogel materials are expected to afford hybrids materials that will combine the durability and thermal performance of a standard silica aerogel with the flexibility, resilience and radiation protection properties of a polymeric material.

## Primary U.S. Work Locations and Key Partners

Multifunctional Flexible Aerogels  
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Organizational  
Responsibility**Responsible Mission  
Directorate:**Space Technology Mission  
Directorate (STMD)**Lead Center / Facility:**

Glenn Research Center (GRC)

**Responsible Program:**Small Business Innovation  
Research/Small Business Tech  
Transfer

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Aspen Aerogels, Inc.	Supporting Organization	Industry	Northborough, Massachusetts

## Primary U.S. Work Locations

Massachusetts	Ohio
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Owen Evans

## Technology Areas

**Primary:**

- TX14 Thermal Management Systems
  - └ TX14.3 Thermal Protection Components and Systems
    - └ TX14.3.1 Thermal Protection Materials